

Appl. No. 10/707,984
Docket No. 140804/GEM-0097

REMARKS / ARGUMENTS

Status of Claims

Claims 1-19 are pending in the application and stand rejected. Applicant has canceled Claims 2, 12, 14 and 18, has amended Claims 1, 3, 6, 13 and 17, and has added new Claims 20-21, leaving Claims 1, 3-11, 13, 15-17, and 19-21 for consideration upon entry of the present Amendment.

Applicant respectfully submits that the rejections under 35 U.S.C. §102(b) and 35 U.S.C. §103(a) have been traversed, that no new matter has been entered, and that the application is in condition for allowance.

Rejections Under 35 U.S.C. §102(b)

Claims 1, 9, and 13 stand rejected under 35 U.S.C. §102(b) as being anticipated by Chappo et al. (U.S. Patent No. 6,510,195, hereinafter Chappo).

Applicant traverses this rejection for the following reasons.

Applicant respectfully submits that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, *in a single prior art reference.*" *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). Moreover, "[t]he identical invention must be shown in as complete detail as is contained in the *** claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Furthermore, the single source must disclose all of the claimed elements "arranged as in the claim." *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984). Missing elements may not be supplied by the knowledge of one skilled in the art or the disclosure of another reference. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 780, 227 U.S.P.Q. 773, 777 (Fed. Cir. 1985).

App'n. No. 10/707,984
Docket No. 140804/GEM-0097

Applicant has canceled Claims 2 and 12, and has incorporated limitations of the same into independent Claim 1. Dependent claims inherit all of the limitations of the parent claim.

Applicant has further canceled Claims 14 and 18, and has incorporated limitations of the same into independent Claim 13. Dependent claims inherit all of the limitations of the parent claim.

In view of Chappo not being used to reject Claims 2, 12, 14 or 18 on grounds of anticipation, Applicant respectfully submits that the Examiner's rejection under 35 U.S.C. §102(b) has been traversed, and requests that the Examiner reconsider and withdraw of this rejection.

Rejections Under 35 U.S.C. §103(a)

Claims 2-8 and 14-16 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Chappo as applied to claims 1 and 13 above. The Examiner references *In re Aller*, 105 USPQ 233, in support of the allegation that it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the thickness as claimed since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working range involves only routine skill in the art. Paper 20050527, page 3.

Claims 10 and 19 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Chappo as applied to claims 1 and 13 above, and further in view of Doubrava et al. (U.S. Patent No. 6,512,809, hereinafter Doubrava).

Claims 11, 12, 17 and 18 are rejected under 35 U.S.C. §103(a) as being unpatentable over Chappo as applied to claims 1 and 13 above, and further in view of Luhta et al. (Conference paper entitled "Back Illuminated Photodiodes for Multislice CT", hereinafter Luhta). The Examiner acknowledges that Chappo is silent with regards to the cell-to-cell signal crosstalk of the array, and looks to Luhta to cure this deficiency. Paper 20050527, page 5.

Applicant traverses these rejections for the following reasons.

Appln. No. 10/707,984
Docket No. 140804/GEM-0097

Applicant respectfully submits that the obviousness rejection based on the References is improper as the References fail to teach or suggest each and every element of the instant invention. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). The Examiner must meet the burden of establishing that all elements of the invention are taught or suggested in the prior art. MPEP §2143.03.

Additionally, Applicant respectfully submits that there is no motivation to modify Chappo to obtain the claimed invention, as Luhta teaches away from such an invention, and therefore a prima facie case of obviousness cannot be established. MPEP §2145(D)(1) provides that a reference teaches away from the claimed invention is a significant factor in determining obviousness.

Applicant has canceled Claims 2 and 12, and has incorporated limitations of the same into independent Claim 1. Dependent claims inherit all of the limitations of the parent claim.

Applicant has further canceled Claims 14 and 18, and has incorporated limitations of the same into independent Claim 13. Dependent claims inherit all of the limitations of the parent claim.

In view of Chappo, or the combination of Chappo and Doubrava, not being used to reject Claims 12 or 18 on grounds of obviousness, Applicant respectfully submits that Chappo and the combination of Chappo and Doubrava fail to establish a prima facie case of obviousness against amended Claims 1 and 13. Dependent claims inherit all of the limitations of the respective parent claim.

In view of Claims 12 and 18 being rejected on obviousness grounds in view of Chappo and Luhta, Applicant herein addresses this combination of references with regard to amended Claims 1 and 13.

As previously mentioned, the Examiner acknowledges that Chappo is silent with regards to the cell-to-cell signal crosstalk of the array, and looks to Luhta to cure this deficiency.

App'n. No. 10/707,984
Docket No. 140804/GEM-0097

In considering Luhta as referenced, Applicant finds Luhta to disclose a 120 micron thick BIP (back illuminated photodiode) (page 239, section 2.3), BIP's thinner than 120 microns having increased fragility (page 236, section 1.2), 120 micron BIP's of uniform thickness having poor crosstalk quality (page 239, section 2.3 and Figures 10 and 11), and 120 micron BIP's having improved crosstalk quality requiring slot depths upwards of 100 microns between neighboring elements, thereby resulting in BIP's having non-uniform thickness (page 239, section 2.3 and Figure 11).

In comparing Luhta with the instant invention, Applicant finds Luhta to not only be missing each and every element of the claimed invention, but also finds Luhta to teach away from BIP's having a thickness less than 120 microns, and to teach away from BIP's having a uniform thickness. In contrast to the claimed invention, Applicant finds Luhta to teach slotted BIP's having a non-uniform thickness with an overall thickness of 120 microns and slot depths upwards of 100 microns.

Amended Claims 1 and 13 now recite, inter alia,

"...wherein the thickness of the first layer is... equal to or less than about 150 microns; and

wherein the array of backlit photodiodes includes neighboring backlit photodiodes having *a cell-to-cell signal crosstalk of equal to or less than about 2% in response to the first layer having a thickness of equal to or less than about 100 microns.*"

Here, Applicant claims a first layer (BIP) thickness equal to or less than about 150 microns and *a cell-to-cell signal crosstalk of equal to or less than about 2% in response to the first layer having a thickness of equal to or less than about 100 microns.*

In comparing the References with the claimed invention, Applicant finds the References to be absent each and every element thereof.

Also, if one skilled in the art were to apply the teaching of Luhta, one would arrive at a 120 micron thick BIP with 50 micron deep slots between neighboring elements in order to arrive at a crosstalk of less than 2% (page 239, section 2.3, and Figure 11), and would not arrive at *a cell-to-cell signal crosstalk of equal to or less than about 2% in*

Appn. No. 10/707,984
Docket No. 140804/GEM-0097

response to the first layer having a thickness of equal to or less than about 100 microns, which is specifically claimed for in the instant invention.

In view of the foregoing, Applicant submits that the References fail to teach or suggest each and every element of the claimed invention and are therefore wholly inadequate in their teaching of the claimed invention as a whole, fail to motivate one skilled in the art to do what the patent Applicant has done, teaches away from the claimed invention, and discloses a substantially different invention from the claimed invention, and therefore cannot properly be used to establish a prima facie case of obviousness. Accordingly, Applicant respectfully requests reconsideration and withdrawal of all rejections under 35 U.S.C. §103(a), which Applicant considers to be traversed.

In light of the forgoing, Applicant respectfully submits that the Examiner's rejections under 35 U.S.C. §102(b) and 35 U.S.C. §103(a) have been traversed, and respectfully requests that the Examiner reconsider and withdraw these rejections.

Regarding New Claims 20-21

Applicant has added new Claims 20-21, which depend from Claim 1. No new matter has been added as antecedent support may be found in the application as originally filed, such as at Paragraph [0012] disclosing a pixel pitch, and at Figures 1 and 2 disclosing the first layer having a uniform thickness.

In view of the remarks set forth above regarding Claim 1 and the absence of the cited art disclosing or teaching the limitations of new Claims 20-21, Applicant submits that new Claims 20-21 are allowable, and respectfully requests entry and notice of allowance thereof.

Appn. No. 10/707,984
Docket No. 140804/GEM-0097

The Commissioner is hereby authorized to charge any additional fees that may be required for this amendment, or credit any overpayment, to Deposit Account No. 07-0845.

In the event that an extension of time is required, or may be required in addition to that requested in a petition for extension of time, the Commissioner is requested to grant a petition for that extension of time that is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to the above identified Deposit Account.

Respectfully submitted,

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